

REMARKS

Claims 1, 5-12 and 15-20 are now pending in the application, with claims 1, 7, 8, 10, 11, 17, 18 and 20 being the independent claims. Reconsideration and further examination are respectfully requested.

In the Office Action, objection was made to the drawings for failing to show every feature of the invention specified in the claims. Accordingly, a new drawing sheet containing additional Figures 4 and 5 is being submitted herewith, and the Specification has been amended above to provide the appropriate description of such new figures. No new matter has been added, as the new figures and description merely track the original claims in the application. Based on the Specification amendment and the newly submitted drawings, withdrawal of this objection is respectfully requested.

In the Office Action, claims 1-20 were rejected under 35 USC § 103(a) over U.S. Patent 6,289,389 (Kikinis) in view of a memorandum by R. Rivest published by Network Working Group, MIT Laboratory for Computer Science and RSA Data Security, Inc., dated April 1992, and designated Request for Comments 1321 (Rivest). Withdrawal of this rejection is respectfully requested for the following reasons.

The pending claims have been amended above to emphasize certain features of the invention that are not believed to be present in the applied art. For the most part, the above claim amendments merely incorporate subject matter in certain previous dependent claims into the independent claims from which they depend and rewrite certain other dependent claims into independent form. Each pending independent claim is believed to be allowable for the reasons set forth below.

IN THE DRAWINGS

Please approve the accompanying additional drawing page containing new
Figures 4 and 5.

The present invention concerns techniques for delivering and receiving content in which the content is divided into multiple chunks and a separate manifest file is included for reassembling the chunks.

Thus, independent claim 1 is directed to the delivery of programming content in which programming content is divided into smaller chunks of data and a chunk file is created for each chunk of data, the chunk file including the chunk of data and a message digest for verifying integrity of the chunk of data. A manifest file that includes information describing how to assemble the chunks of data also is generated. Finally, the chunk files and the manifest file are transmitted to a remote location, with at least some of the chunk files being transmitted on at least one physical medium.

Similarly, independent claim 11 is directed to receiving programming content. Plural chunk files and a manifest file are received, the chunk files including chunks of data that together make up the programming content, each chunk file also including a message digest for verifying integrity of the chunk of data within the chunk file, and the manifest file including information describing how to assemble the chunks of data. The chunks of data are stored and then assembled and played according to the information in the manifest file. At least some of the chunk files are received on at least one physical medium.

The foregoing combinations of features are not disclosed or suggested by the applied art. In particular, the applied art does not disclose or suggest at least the feature of using a manifest file describing how to assemble chunks of data contained in separate chunk files that are transmitted on one or more physical media.

In this regard, Kikinis describes a system that utilizes two possible communications channels, a high-bandwidth channel via satellite link and a low-bandwidth channel via a telephone modem (which Kikinis refers to as “land” communication). Neither such communications channel involves delivery of content on any physical medium, and nothing in Kikinis indicates to the contrary.

Moreover, the specific portion of the applied art referenced in the Office Action as showing the feature of data delivery on physical media (i.e., column 8 lines 31-45 of Kikinis) instead merely discusses the use of a division technique and corresponding division key when content data is sent via a satellite link. This is significantly different than sending chunk files on one or more physical media and utilizing a manifest file in connection therewith, according to the present invention.

Lacking these features of the invention, no permissible combination of Kikinis and Rivest would have suggested claim 1 or claim 10. Therefore, independent claims 1 and 10 are believed to be allowable over the applied art.

Independent claims 7 and 17 recite, among other features, the feature that the same manifest file that includes information describing how to assemble the chunks of data also includes a block message digest for verifying integrity of the programming content. As to this feature, the Office Action states that “Kikinis mentions the possible use of encryption for security [citing column 8 lines 31-45] and therefore a message digest would be one possible security option, and adds that “it would have been obvious to combine the teachings of Kikinis and Rivest regarding the use of message digests.”

In response, it is noted that encryption is used to ensure privacy of data while a message digest, such as the MD5 techniques described in Rivest, is used to verify

integrity of data. Accordingly, a brief reference to encryption in Kikinis would not have suggested the use of a message digest, as in Rivest, in any manner whatsoever. Moreover, nothing in either Kikinis or Rivest would have suggested including such a message digest in a separate manifest file, as recited in the present claims, as opposed to in individual chunk files.

It is noted that claims 7 and 17 recite the inclusion of a message digest for verifying the integrity of the chunk of data in each chunk file and also the inclusion of a message digest for verifying integrity of the programming content in the manifest file. This particular combination is not disclosed or suggested by the applied art, and the Office Action has not even alleged that it is.

Accordingly, independent claims 7 and 17 are believed to be allowable over the applied art.

Independent claims 8 and 18 recite, among other features, the feature that the manifest file includes, for each chunk of data, a message digest for verifying the integrity of such chunk of data, while each chunk file includes a message digest for verifying the integrity of the chunk of data in the file. This particular combination is not disclosed or suggested by the applied art, and the Office Action has not even alleged that it is. Rather, the Office Action merely bases the rejection of these claims on remarks similar to those made in connection with the rejection of claims 7 and 17.

Lacking this combination of features, claims 8 and 18 could not have been suggested by any permissible combination of Kikinis and Rivest. Accordingly, independent claims 8 and 18 are believed to be allowable over the applied art.

Independent claims 10 and 20 recite, among other features, the feature that the manifest file includes plural sets of information, with each set of information describing how to assemble the chunks of data in a different predetermined manner. This feature also is not disclosed or suggested by the applied art.

In fact, the only portion of the applied art cited with respect to this feature of the invention is column 8 lines 31-45 of Kikinis. However, that portion of Kikinis is only seen to discuss the use of a single division key for reassembling the transmitted packets in a single manner.

Accordingly, independent claims 10 and 20 also are believed to be allowable over the applied art.

The other claims in the application depend from the independent claims discussed above and therefore are believed to be allowable for at least the same reasons. In addition, each such dependent claim recites an additional feature of the invention that further distinguishes the invention from the applied art. Accordingly, the individual reconsideration of each on its own merits is respectfully requested.

For instance, dependent claims 5 and 15 recite the further feature that the chunk files are distributed across a set of physical media, and each of the physical media in the set contains the manifest file. This additional feature of the invention is not disclosed or suggested by the applied art. In fact, the only portion of the applied art cited in the Office Action with respect to this feature is column 8 lines 31-45 of Kikinis. However, as noted above, this portion of Kikinis merely discusses the use of a division technique and a division key when transmitting data via a satellite link. It says nothing whatsoever about transmitting chunk files on physical media, much less about doing so

in such a manner that each of such physical media includes a copy of the manifest file. For these additional reasons, dependent claims 5 and 15 are believed to be allowable over the applied art.

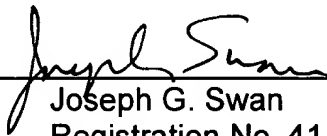
In order to sufficiently distinguish Applicants' invention from the applied art, the foregoing remarks emphasize several of the differences between the applied art and Applicants' invention. However, no attempt has been made to categorize each novel and unobvious difference. Applicants' invention comprises all of the elements and all of the interrelationships between those elements recited in the claims. It is believed that for each claim the combination of such elements and interrelationships is not disclosed, taught or suggested by the applied art. It is therefore believed that all claims in the application are fully in condition for allowance, and an indication to that effect is respectfully requested.

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Respectfully submitted,

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